

Caution Bulletin

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Title: Burned Wire on PCM-2 Personnel Contamination Monitor Causes Facility Evacuation

Date: March 20, 2006

Identifier: 2006-RL-HNF-0006

Lessons Learned Summary:

An Eberline Personnel Contamination Monitor (PCM-2) at the 105KE facility experienced a "loose wire" that caused an electrical short. The short caused wiring insulation to burn, which cause heavy smoke to emanate from the top of the instrument, leading to a facility evacuation.

Discussion of Activities:

On 12/29/05 after exiting the 105KE Basin and proceeding to the PCM-2, an operator observed that the displays on the monitor were not working and heavy smoke was coming out of the top of the unit. The facility was evacuated and the monitor was unplugged. When Hanford Fire Department (HFD) personnel arrived they found no fire or smoke coming from the monitor.

Analysis:

Instrument Technicians found burned insulation on a six-foot section of wire associated with a photocell on the foot pad. The wire had loosened and sagged over time, eventually pulling free and shorting out. The smoke was preceded by an intermittent failure of the PCM-2 to count continuously when the worker switched from the front count to the back count.

Recommendations:

Inspection of other units in the facility found loose/sagging wires on two of three similar monitors, which were subsequently repaired.

Eberline, the manufacturer, is aware of this issue and has made available a harness kit for these instruments that will reroute and properly secure the wires away from the foot area of the PCM-2. Owners of PCM-2 Personnel Contamination Monitors should check their units for similar problems.

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References: Occurrence Report EM-RL--PHMC-SNF-2006-001
K-Basins Lessons Learned KBLL-06-05